

Appl. No. 10/804,322
Supplemental Reply to Office action of March 27, 2006
Page 2 of 8

IN THE CLAIMS:

1. (Currently amended) A medical device for delivering a pulse waveform to a target site of a patient, comprising:

an energy storage device storing electrical energy;

a plurality of electrodes electrically coupled to the energy storage device;

and

control circuitry, coupled to the energy storage device and the plurality of electrodes, generating the pulse waveform from the stored energy and delivering the pulse waveform to the target site via the plurality of electrodes, wherein the pulse waveform corresponds to multiple phasic signals delivered simultaneously to multiple pathways between the plurality of electrodes;

wherein the multiple phasic signals are out of phase by a predetermined phase shift.

2. (Currently amended) The device of claim 1, wherein the multiple phasic signals each correspond to a substantially a sinusoidal waveform ~~are out of phase by a predetermined phase shift.~~

3. (Currently amended) The device of claim 2 1, wherein the predetermined phase shift is approximately equal to 120 degrees.

4. (Original) The device of claim 1, further comprising a smoothing element associated with each of the plurality of electrodes to smooth each of the multiple signals.

5. (Original) The device of claim 1, wherein the plurality of electrodes are positioned in a Delta configuration about the target site.

Appl. No. 10/804,322
Supplemental Reply to Office action of March 27, 2006
Page 3 of 8

6. (Original) The device of claim 1, wherein the plurality of electrodes are positioned in a Wye configuration about the target site.
7. (Original) The device of claim 1, wherein one or more of the plurality of electrodes is a non-intracardiac electrode.
8. (Original) The device of claim 1, wherein one or more of the plurality of electrodes are subcutaneous electrodes.
9. (Original) The device of claim 1, further comprising a smoothing element positioned electrically in series with the energy storage device.
10. (Original) The device of claim 1, wherein the energy storage device includes a first element and a second element, and the plurality of electrodes includes a reference electrode positioned between the first element and the second element, further comprising:
 - a first pair of switching elements associated with a first electrode of the plurality of electrodes to provide a plurality of output pulses corresponding to a first signal of the multiple signals output at the first electrode; and
 - a second pair of switching elements associated with a second electrode of the plurality of electrodes to provide a plurality of output pulses corresponding to a second signal of the multiple signals output at the second electrode, wherein the plurality of output pulses corresponding to the first signal and the plurality of output pulses corresponding to the second signal each include positive going and negative going pulses forming a bipolar signal, and wherein the first signal and the second signal are out of phase by a predetermined phase shift.
11. (Currently Amended) A medical device for delivering a pulse waveform comprising multiple signals to a target site of a patient, comprising:
 - an energy storage device storing electrical energy;

Appl. No. 10/804,322
Supplemental Reply to Office action of March 27, 2006
Page 4 of 8

a plurality of electrodes electrically coupled to the energy storage device;
a first pair of switching elements associated with a first electrode of the plurality of electrodes to provide a plurality of output pulses corresponding to a first signal of the multiple signals output at the first electrode;
a second pair of switching elements associated with a second electrode of the plurality of electrodes to provide a plurality of output pulses corresponding to a second signal of the multiple signals output at the second electrode;
a third pair of switching elements associated with a third electrode of the plurality of electrodes to provide a plurality of output pulses corresponding to a third signal of the multiple signals output at the third electrode; and
control circuitry controlling the switching elements in a predetermined pattern to generate the pulse waveform as multiple phasic signals delivered simultaneously to multiple pathways associated with the plurality of electrodes;
wherein the multiple phasic signals are out of phase by a predetermined phase shift.

12. (Currently amended) The device of claim 11, wherein the plurality of output pulses corresponding to the first signal, the plurality of output pulses corresponding to the second signal, and the plurality of output pulses corresponding to the third signal each include positive going and negative going pulses forming a phasic bipolar signal corresponding to a substantially sinusoidal waveform.

13. (Original) The device of claim 11, further comprising:
a first smoothing element to smooth the plurality of output pulses corresponding to the first signal;
a second smoothing element to smooth the plurality of output pulses corresponding to the second signal; and
a third smoothing element to smooth the plurality of output pulses corresponding to the third signal.

Appl. No. 10/804,322
Supplemental Reply to Office action of March 27, 2006
Page 5 of 8

14. (Original) The device of claim 11, wherein the energy storage device includes a first element and a second element, and further comprising:

an output switching element coupled to the control circuitry between the first element and the second element, wherein the control circuitry controls a state of the output switching element to alternate the between a Delta configuration and a Wye configuration.

15. (Previously presented) The device of claim 11, wherein the energy storage device includes a first energy storage element associated with the first switching element, a second energy storage element associated with the second switching element, and a third energy storage element associated with the third switching element.

16. (Original) The device of claim 11, further comprising a smoothing element positioned electrically in series with the energy storage device.

17. (Currently Amended) A method of delivering a pulse waveform to a target site of a patient, comprising:

generating a plurality of output pulses corresponding to each of a plurality of electrodes; and

controlling switching elements associated with each of the plurality of electrodes in a predetermined pattern to generate the pulse waveform as multiple phasic signals delivered simultaneously to multiple pathways associated with the plurality of electrodes;

wherein the multiple phasic signals are out of phase by a predetermined phase shift.

Appl. No. 10/804,322
Supplemental Reply to Office action of March 27, 2006
Page 6 of 8

18. (Currently amended) The method of claim 17, wherein the multiple phasic signals each correspond to a substantially sinusoidal waveform~~are out of phase by a predetermined phase shift.~~

19. (Currently amended) The method of claim ~~48~~ 17, wherein the predetermined phase shift is approximately equal to 120 degrees.

20. (Original) The method of claim 17, wherein the plurality of electrodes are approximately positioned in a Delta configuration about the target site.

21. (Original) The method of claim 17, wherein the plurality of electrodes are positioned in a Wye configuration about the target site.

22. (Original) The method of claim 17, wherein one or more of the plurality of electrodes is a non-intracardiac electrode.

23. (Previously presented) The method of claim 17, wherein one or more of the plurality of electrodes are subcutaneous electrodes.

24. (Currently Amended) A computer-readable medium having computer-executable instructions for performing a method, comprising:

generating a plurality of output pulses corresponding to each of a plurality of electrodes; and

controlling switching elements associated with each of the plurality of electrodes in a predetermined pattern to generate the pulse waveform as multiple phasic signals delivered simultaneously to multiple pathways associated with the plurality of electrodes;

wherein the multiple phasic signals are out of phase by a predetermined phase shift.